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The New Smoke Abatement Bill.

THE new Government bill to prevent the pollution of the atmosphere by smoke again raises the vexed question of the best means of accomplishing this highly desirable result. That the bill, which merely modifies the existing Act of 1875, will leave matters very much as they are, is, however, the considered opinion of those who framed the recommendations of the Departmental Smoke Abatement Committee appointed by the Ministry of Health.

Two years ago an interim report on the prevention of domestic smoke was prepared at the pressing request of the Minister of Health in view of the large housing schemes in contemplation, only to lie dormant in the department.

It is perhaps not sufficiently realised how much of the dirt and damage in our large industrial centres arises from the domestic hearth. In spite of pious opinions to the contrary, it has been established, from carefully ascertained facts, by two independent observers, that of the 2½ million tons of soot turned into the atmosphere something like four-fifths is emitted from domestic chimneys. But that is not all. This incompletely burnt material, formed to some extent by a process of destructive distillation, such as takes place in gas retorts, is charged with tar, whereby it clings to every object with which it comes into contact. Moreover, the tarry soot is strongly acid with sulphuric acid, and its presence on the mortar and masonry of buildings soon shows itself by their gradual disintegration. The evidence of Sir Frank Baines, the head of H.M. Board of Works, was convincing in this respect, and his specimens and photographs exhibited during the inquiry illustrated in a striking manner the conversion of the calcium carbonate (which cement the siliceous particles of the original stone) into the soluble calcium sulphate and the subsequent crumbling of the surface.

Furnace smoke, on the other hand, owing to its higher temperature of combustion, contains a negligible amount of tar; but consists of fine cinder and grit discharged mechanically by the draught. It is true that it darkens the atmosphere, but it does not adhere to any extent, and much of it is washed away by rain.

To return then to domestic smoke. In a brochure recently published and entitled "The Smokeless City,"¹ Mr. E. D. Simon, a member of the Government Committee and present Lord Mayor of Manchester, and Miss Marion Fitzgerald, his collaborator, have put together the principal facts relating to domestic heating and domestic smoke. The information is drawn partly from the evidence of witnesses who appeared before the committee, partly from the reports of Mr. A. H.

¹ "The Smokeless City," by E. D. Simon and Marion Fitzgerald. Pp. xi + 82. London: Longmans, Green and Co., 1922. 1s. 6d.

Barker and Dr. Margaret Fishenden on the efficiency of various forms of grates and kitchen-ranges (already reviewed in these columns), and partly on statistics collected by the Manchester Air Pollution Advisory Board (of which Mr. Simon is chairman) on the cost of washing, a sum estimated at 250,000*l.* a year. The subject is introduced in a preface by Lord Newton, who acted as chairman of the Departmental Committee, and has given time and thought and a sustained and disinterested enthusiasm not often associated in the minds of most people with members of the Upper House. He has even travelled abroad with the sole object of learning how smoke was successfully controlled or prevented in foreign cities.

It is hoped that Lord Newton's pungent remarks on governments—parliamentary and municipal—may be read in the right quarter. He says: "The battle . . . against industrial smoke may be said to have been won in principle, but it is scarcely necessary to warn enthusiasts that there are many parliamentary dangers to be overcome, and that governments are not as a rule particularly zealous in forcing through bills of a non-vote-catching nature."

If the object of the authors was to make out a case against domestic smoke by demonstrating in clear and incisive language, backed by carefully ascertained statistics, its wastefulness and uselessness and the damage it entails, which may be reckoned in millions of pounds annually, the little volume before us may be said to have more than accomplished its purpose. It is now for the public to read the case presented by the authors, take it to heart, and put the conclusions to practical use. The authors have not restricted their remarks to destructive criticism of present methods and appliances for heating and cooking. They have shown a better way. Though they condemn, as all witnesses condemned, the old-fashioned open range, they have described and illustrated modern ranges and discussed their efficiency for varied requirements. They explain in simple language the comparative value of coal, coke, and semi-coke (low-temperature coke) and the relative cost of gas and coal. The book does not profess to be a scientific treatise, and a good deal of recent research on the use of gas for cooking and on the subject of ventilation has been overlooked; but this is no drawback. It is intended for householders, builders, and architects, to whom an appeal based on scientific principles would be incomprehensible and almost certainly unread.

As the new bill excludes all domestic fireplaces and largely ignores the recommendations of the Departmental Committee in regard to new housing construction, it is well that the authors of "The Smokeless City" have saved from the eternal silence of Ministerial

pigeon-holes the accumulated and valuable evidence of so many expert witnesses.

Leaving then the subject of domestic smoke, we may consider for a moment the improvements and defects in the new bill. The amendments are few; the qualification of the indefinite term "black" is omitted, and the expression "smoke" includes soot, ash, and grit; the maximum penalty is raised from 5*l.* to 50*l.*, and the person summoned under the Act must show in his defence that he has used "the best practicable means." On the other hand, there is no reference to the supervision of heating arrangements in new private dwellings but only in public buildings; there is no attempt to standardise the system of inspection of factory chimneys, strongly advocated by the representative of the Sanitary Inspectors' Association; no clear definition of the powers of the central authority; no combination of large areas under the County or Borough Councils; no inclusion of new processes emitting noxious vapours; no provision for competent scientific advisors and supervisors appointed by the Ministry of Health to control and report—in short, the position remains very much *in statu quo*, and the prevention of smoke in industrial areas still remains in the incompetent hands of the local authority, without pressure from the central authority.

The only hope for salvation lies in the energetic action of a disinterested sanitary committee and its medical officer. As the two are linked together, and the smoke inspector harnessed to them, and as members of the sanitary committee are usually interested in manufacture and factory chimneys, the prospect of amelioration is not bright. But if such a disinterested sanitary committee, intent on the purification of its atmosphere, existed, it would reduce boiler smoke to a negligible amount (and the greater part of the factory smoke comes from boilers); it would have a building to exhibit the best appliances for domestic heating and cooking; afford details of the cost of installation and efficiency; it would promote classes for stokers, and appoint an expert, scientifically trained, and well-paid inspector. Such an ideal committee would within a short period render the atmosphere comparable with that of the clean industrial centres of France or Germany.

J. B. COHEN.

The Earth's Structure and its Evolution.

Earth Evolution and its Facial Expression. By Prof. W. H. Hobbs. Pp. xviii + 178. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd., 1922.) 15*s.* net.

THIS volume is intended to present to the non-technical reader the author's conclusions on the form and structure of the earth's crust. The